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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,850	10/28/2003	Vahe Adamian	10030700	7850

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AGILENT TECHNOLOGIES, INC.
Intellectual Property Administration
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EXAMINER	
GUILL, RUSSELL L	
ART UNIT	**PAPER NUMBER**
2123	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/695,850	ADAMIAN, VAHE	
	Examiner	Art Unit	
	Russ Guill	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/28/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1 - 26 have been examined. Claims 1 - 26 have been rejected.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. **Claims 1 - 26** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

a. Regarding claim 1 and dependent claims, the recited method appears to contain abstract ideas such as mathematically isolating a representative portion of a transmission line. Therefore, to be statutory, the claim must be directed to a practical application producing a concrete, useful and tangible result. The claim does not appear to produce a tangible result needed to support a practical application. Further, the claims appear to be a mathematical process, and the claims appear to preempt all uses of the process.

b. Regarding claims 11 and dependent claims, the recited apparatus appears to contain software, which appears to be an abstract idea. Therefore, to be statutory, the claim must be directed to a practical application producing a concrete, useful and tangible result. The claims do not appear to produce a tangible result needed to support a practical application. Further, the apparatus

appears to perform a mathematical process, and the claims appear to preempt all uses of the process.

c. Regarding claim 21 and dependent claims, the recited method appears to contain abstract ideas such as converting frequency domain representations of s-parameters to impulse response time domain representations. Therefore, to be statutory, the claim must be directed to a practical application producing a concrete, useful and tangible result. The claim does not appear to produce a tangible result needed to support a practical application. Further, the claims appear to be a mathematical process, and the claims appear to preempt all uses of the process.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 1 - 5, 9 - 10, 11 - 15 and 19 - 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito (Akihiko Saito et al., "Measurement and analysis for transmission characteristics of microstrip line covered with lossy magnetic sheet", published online 28 May 2003, Electronics and Communications in Japan, Part 1, Volume 86, Number 11, pages 66 - 74) in view of Eisenstadt (Eisenstadt; "S-Parameter

Based IC Interconnect Transmission Line Characterization", art provided by the Applicant on the Information Disclosure Statement dated October 28, 2003).

a. The art of Saito is directed to measurement of transmission line characteristics (Title).

b. The art of Eisenstadt is directed to s-parameter based IC interconnect transmission line characterization (Title).

c. The art of Eisenstadt and the art of Saito are analogous art because they both concern high speed transmission line characteristics.

d. The motivation to use the art of Eisenstadt with the art of Saito would have been the benefit recited in Eisenstadt that the work improves upon earlier work by developing test structure layouts that characterize modern fine line lithography interconnect using standard on-chip microwave probing and s-parameter measurements (**page 483, right-side column, second paragraph that starts with, "This paper improves . . ."**).

e. Regarding **claims 1 and 11**:

f. Saito appears to teach or fairly suggest:

g. obtaining measured s-parameters of a connectivity system in combination with said uniform transmission line (**page 69, section 3.1 Measurement of S_{11} and S_{21} of the MSL, especially the sentence that starts with, "Here, S_{11} is measured directly . . ."; and page 69, figure 2**);

h. mathematically isolating a representative portion of said uniform transmission line from said connectivity system by identifying an electrical position of a representative portion of said uniform transmission line as distinct from said connectivity system (**pages 71 - 72, section 4.2 S parameters of the MSL, second paragraph, especially**

the second sentence, and page 72, right-side column, second paragraph, second sentence; and section 3.1 Measurement of S_{11} and S_{21} of the MSL);

i. adjusting said measured s-parameters to represent s-parameters of only said representative portion of said uniform transmission line **(pages 71 - 72, section 4.2 S parameters of the MSL, second paragraph, especially the second sentence, and page 72, right-side column, second paragraph, second sentence; and section 3.1 Measurement of S_{11} and S_{21} of the MSL);**

j. Saito does not specifically teach:

k. extracting Telegrapher's Equation transmission parameters from said adjusted measured s-parameters.

l. Eisenstadt appears to teach:

m. extracting Telegrapher's Equation transmission parameters from said adjusted measured s-parameters **(page 485, left-side column, entire column, and right-side column, entire column, especially the paragraph that starts with, "S-parameter data from the structures described in section II (see Figs. 1 and 2) were used to extract interconnect line parameters R, L, C, and G", which essentially teaches the limitation).**

n. Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Eisenstadt with the art of Saito to produce the claimed invention.

o. Regarding **claims 2 and 12**:

p. Saito appears to teach or fairly suggest:

q. said connectivity system in combination with said uniform transmission line comprises a connectorized transmission line configuration **(page 69, Figure 2).**

r. Regarding **claims 3 and 13**:

s. Saito does not specifically teach:

t. said connectivity system in combination with said uniform transmission line comprises a probed transmission line configuration.

u. Eisenstadt appears to teach:

v. said connectivity system in combination with said uniform transmission line comprises a probed transmission line configuration (**page 484, first paragraph, especially the sentence that starts, "A Cascade Microtech Probe Station . . ."**).

w. Regarding **claims 4 and 14**:

x. Saito does not specifically teach:

y. obtaining measured reflection and transmission s-parameters.

z. Eisenstadt appears to teach:

aa. obtaining measured reflection and transmission s-parameters (**page 485, left-side column, entire column, and right-side column, entire column; transmission and reflection s-parameters are used to compute the interconnect line parameters R, L, C, and G**).

bb. Regarding **claims 5 and 15**:

cc. Saito appears to teach or fairly suggest:

dd. converting said measured reflection s-parameter to a measured reflection impulse response, identifying first and second uniform transmission line delineations in said measured reflection impulse response, identifying start and stop gates from said first and second uniform transmission line delineations, establishing a gated reflection impulse response, and converting said gated reflection impulse response to the frequency domain to obtain an adjusted reflection s-parameter

(pages 71 - 72, section 4.2 S parameters of the MSL, second paragraph, especially the second sentence, and page 72, right-side column, second paragraph, second sentence, and figure 10; and section 3.1 Measurement of S_{11} and S_{21} of the MSL).

ee. Regarding **claims 9 and 19**:

ff. Saito does not specifically teach:

gg. said Telegrapher's Equation transmission parameters comprise normalized resistance, inductance, capacitance, and admittance values per unit length.

hh. Eisenstadt appears to teach:

ii. said Telegrapher's Equation transmission parameters comprise normalized resistance, inductance, capacitance, and admittance values per unit length (**page 485, left-side column, entire column {especially second paragraph that starts, "Interconnect signal . . ."}, and right-side column, entire column, especially the paragraph that starts with, "S-parameter data from the structures described in section II (see Figs. 1 and 2) were used to extract interconnect line parameters R, L, C, and G"**).

jj. Regarding **claims 10 and 20**:

kk. Saito does not specifically teach:

ll. calculating a complex characteristic impedance and complex propagation constant from said Telegrapher's Equation transmission parameters.

mm. Eisenstadt appears to teach:

nn. calculating a complex characteristic impedance and complex propagation constant from said Telegrapher's Equation transmission parameters (**page 485, left-side column, entire column, and right-side**

column, entire column, especially the second paragraph that starts with, "During the extraction . . .").

6. **Claims 6 - 8 and 16 - 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito as modified by Eisenstadt as applied to claims **1 - 5, 9 - 10, 11 - 15 and 19 - 20** above, and further in view of AgilentAppNote1364 (Agilent Technologies, "Agilent De-embedding and Embedding S-Parameter Networks Using a Vector Network Analyzer", 2001, Agilent Technologies).

a. Saito as modified by Eisenstadt teaches a method of modeling a uniform transmission line, as recited in claims **1 - 5, 9 - 10, 11 - 15 and 19 - 20** above.

b. Regarding **claims 6 and 16**:

c. Saito appears to teach:

d. converting said measured transmission s-parameter to a measured transmission impulse response (**pages 71 - 72, section 4.2 S parameters of the MSL, second paragraph, especially the second sentence; and section 3.1 Measurement of S_{11} and S_{21} of the MSL**);.

e. Saito as modified by Eisenstadt does not specifically teach:

f. adjusting a phase component of said adjusted reflection s-parameter by shifting a reference plane by an electrical length equal to said start gate.

g. identifying an electrical length of said connectivity system in combination with said uniform transmission line.

h. adjusting a phase component of said measured transmission s-parameter by adding an electrical length equal to a difference between said electrical length of said connectivity system in combination with said uniform transmission line and an electrical length between said start and stop gates.

i. AgilentAppNote1364 appears to teach:

j. adjusting a phase component of said adjusted reflection s-parameter by shifting a reference plane by an electrical length equal to said start gate (**page 11**).

k. identifying an electrical length of said connectivity system in combination with said uniform transmission line (**page 11**).

l. adjusting a phase component of said measured transmission s-parameter by adding an electrical length equal to a difference between said electrical length of said connectivity system in combination with said uniform transmission line and an electrical length between said start and stop gates (**page 11**).

m. The art of AgilentAppNote1364 is directed to de-embedding and embedding S-parameter networks using a vector network analyzer (**Title**).

n. The art of AgilentAppNote1364 and the art of Saito are analogous art because they both contain the art of using a network analyzer to measure parameters.

o. The motivation to use the art of AgilentAppNote1364 with the art of Saito as modified by Eisenstadt would have been the benefit recited in AgilentAppNote1364 that the de-embedding procedure can produce very accurate results for the non-coaxial DUT without complex non-coaxial calibration standards (**page 2, right-side column, last sentence**). Further, the ordinary artisan would have known to use a de-embedding process (**see for example, Gronau et al., "A Simple Broad-Band Device De-embedding Method Using an Automatic Network Analyzer with Time-Domain Option", March 1989, IEEE Transactions on Microwave Theory and Techniques, Volume 37, Number 2**).

p. Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of AgilentAppNote1364 with the art of Saito as modified by Eisenstadt to produce the claimed invention.

q. Regarding **claims 7 and 17**:

r. Saito as modified by Eisenstadt does not specifically teach:

s. scaling a magnitude component of said measured transmission s-parameter.

t. AgilentAppNote1364 appears to teach:

u. scaling a magnitude component of said measured transmission s-parameter (**pages 5 - 7**).

v. Regarding **claims 8 and 18**:

w. Saito as modified by Eisenstadt does not specifically teach:

x. adjusting said magnitude component of said measured transmission s-parameter by a percentage of the electrical length of said representative portion relative to said electrical length of said connectivity system in combination with said uniform transmission line.

y. AgilentAppNote1364 appears to teach:

z. adjusting said magnitude component of said measured transmission s-parameter by a percentage of the electrical length of said representative portion relative to said electrical length of said connectivity system in combination with said uniform transmission line (**pages 5 - 7**).

7. **Claims 21 - 26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito in view of Eisenstadt, further in view of AgilentAppNote1364 (Agilent Technologies,

"Agilent De-embedding and Embedding S-Parameter Networks Using a Vector Network Analyzer", 2001, Agilent Technologies).

a. The art of Saito is directed to measurement of transmission line characteristics (**Title**).

b. The art of Eisenstadt is directed to s-parameter based IC interconnect transmission line characterization (**Title**).

c. The art of AgilentAppNote1364 is directed to de-embedding and embedding S-parameter networks using a vector network analyzer (**Title**).

d. The art of Eisenstadt and the art of Saito are analogous art because they both concern high speed transmission line characteristics.

e. The art of AgilentAppNote1364 and the art of Saito are analogous art because they both contain the art of using a network analyzer to measure parameters.

f. The motivation to use the art of AgilentAppNote1364 with the art of Saito as modified by Eisenstadt would have been the benefit recited in AgilentAppNote1364 that the de-embedding procedure can produce very accurate results for the non-coaxial DUT without complex non-coaxial calibration standards (**page 2, right-side column, last sentence**). Further, the ordinary artisan would have known to use a de-embedding process (**see for example, Gronau et al., "A Simple Broad-Band Device De-embedding Method Using an Automatic Network Analyzer with Time-Domain Option", March 1989, IEEE Transactions on Microwave Theory and Techniques, Volume 37, Number 2, pages 479 - 483**).

g. The motivation to use the art of Eisenstadt with the art of Saito would have been the benefit recited in Eisenstadt that the work improves upon earlier work by developing test structure layouts that characterize modern fine line lithography interconnect using standard on-chip microwave probing and s-parameter measurements (**page 483, right-side column, second paragraph that starts with, "This paper improves . . ."**).

h. Regarding **claim 21**:

i. Saito appears to teach or fairly suggest:

j. obtaining measured reflection and transmission s-parameters of a connectivity system in combination with said uniform transmission line (**page 69, section 3.1 Measurement of S_{11} and S_{21} of the MSL**);

k. converting frequency domain representations of said s-parameters to respective impulse response time domain representations (**pages 71 - 72, section 4.2 S parameters of the MSL, second paragraph, especially the second sentence, and page 72, right-side column, second paragraph, second sentence; and section 3.1 Measurement of S_{11} and S_{21} of the MSL**);

l. identifying a start gate, a stop gate, and an electrical length of said connectivity system and uniform transmission line combination from said time domain representations (**pages 71 - 72, section 4.2 S parameters of the MSL, second paragraph, especially the second sentence, and page 72, right-side column, second paragraph, second sentence; and section 3.1 Measurement of S_{11} and S_{21} of the MSL**);

m. establishing a gated reflection impulse response for only a representative portion of said uniform transmission line as distinct from said connectivity system based upon said start gate and said stop gate (**pages 71 - 72, section 4.2 S parameters of the MSL, second paragraph, especially the second sentence, and page 72, right-side column, second paragraph, second sentence; and section 3.1 Measurement of S_{11} and S_{21} of the MSL**);

n. converting said gated reflection impulse response to a gated reflection s-parameter (**pages 71 - 72, section 4.2 S parameters of the**

MSL, second paragraph, especially the second sentence, and page 72, right-side column, second paragraph, second sentence; and section 3.1 Measurement of S_{11} and S_{21} of the MSL);

o. Saito does not specifically teach:

p. adjusting a phase component of said measured transmission s-parameters to represent s-parameters of only said representative portion of said uniform transmission line.

q. scaling said magnitude component of said transmission s-parameter as a percentage of electrical length of said representative portion relative to said electrical length of said connectivity system and uniform transmission line combination.

r. extracting Telegrapher's Equation transmission parameters from said adjusted measured s-parameters.

s. Eisenstadt appears to teach:

t. extracting Telegrapher's Equation transmission parameters from said adjusted measured s-parameters (**page 485, left-side column, entire column, and right-side column, entire column, especially the paragraph that starts with, "S-parameter data from the structures described in section II (see Figs. 1 and 2) were used to extract interconnect line parameters R, L, C, and G", which essentially teaches the limitation**).

u. AgilentAppNote1364 appears to teach:

v. adjusting a phase component of said measured transmission s-parameters to represent s-parameters of only said representative portion of said uniform transmission line (**page 11**).

w. scaling said magnitude component of said transmission s-parameter as a percentage of electrical length of said representative portion relative to said electrical length of said connectivity system and uniform transmission line combination (**pages 5 - 7**).

x. Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of AgilentAppNote1364 and the art of Eisenstadt with the art of Saito to produce the claimed invention.

y. Regarding **claim 22**:

z. Saito does not specifically teach:

aa. shifting a reference plane of said phase component by an electrical length equal to said start gate.

bb. AgilentAppNote1364 appears to teach:

cc. shifting a reference plane of said phase component by an electrical length equal to said start gate (**page 11**).

dd. Regarding **claim 23**:

ee. Saito appears to teach:

ff. said connectivity system in combination with said uniform transmission line comprises a connectorized transmission line (**page 69, figure 2**).

gg. Regarding **claim 24**:

hh. Saito does not specifically teach:

ii. said connectivity system in combination with said uniform transmission line comprises a probed transmission line.

jj. Eisenstadt appears to teach:

kk. said connectivity system in combination with said uniform transmission line comprises a probed transmission line (**page 484, first paragraph, especially the sentence that starts, "A Cascade Microtech Probe Station . . ."**).

ll. Regarding **claim 25**:

mm. Saito appears to teach:

nn. taking measurements on a vector network analyzer (**page 69, figure 2**).

oo. Regarding **claim 26**:

pp. Saito does not specifically teach:

qq. retrieving measurement data from data storage media.

rr. AgilentAppNote1364 appears to teach:

ss. retrieving measurement data from data storage media (**page 3, left-side column, first paragraph, "the measured data needs to be captured and post-processed in order to remove the effects of the test fixture"**).

8. **Examiner's Note:** Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the Applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner. The entire reference is considered to provide disclosure relating to the claimed invention.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure:

a. P. Reinhardt-Nickulin et al., "Method of longitudinal impedance measurement for accelerator elements in wide frequency region using double Fourier transform", **1991**, Conference record of the 1991 Particle Accelerator Conference, pages 1014 - 1016; teaches the method of adjusting measured s-parameters claimed in claim 1;

b. Vittorio Ricchiuti et al.; "Characterization of Interconnections Performances for High Speed Digital Boards: a Frequency/Time Domain Approach", 22 August 2003, 2003 International Symposium on Electromagnetic Compatibility, Volume 2, pages 686 - 689; teaches the method of adjusting measured s-parameters claimed in claim 1;

c. Bradley et al., U.S. Patent Number 5,524,281, filed March 7, 1995, column 72, lines 5 - 30; teaches the method of adjusting measured s-parameters claimed in claim 1;

d. Cannon et al., U.S. Patent Number 5,050,107, filed February 3, 1989, column 18, lines 46 - 65; teaches the method of adjusting measured s-parameters claimed in claim 1;

e. Derek A. McNamara et al., "Experimentally Determined Equivalent Network Scattering Parameters for Edge Slots in Rectangular Waveguide for Use as Reference Data", 1993, IEEE Microwave and Guided Wave Letters, Volume 3,

Number 11, November 1993, pages 405 - 407, especially section II Measurement Procedure; teaches the method of adjusting measured s-parameters claimed in claim 1;

f. Gronau et al., "A Simple Broad-Band Device De-embedding Method Using an Automatic Network Analyzer with Time-Domain Option", March 1989, IEEE Transactions on Microwave Theory and Techniques, Volume 37, Number 2, pages 479 - 483; teaches a de-embedding method;

g. George W. Hanson et al.; "An Improved De-embedding Technique for the Measurement of the Complex Constitutive Parameters of Materials Using a Stripline Field Applicator", June 1993, IEEE Transactions on Instrumentation and Measurement, Volume 42, Number 3, pages 740 - 745; teaches a de-embedding method;

h. Agilent AN 154 S-Parameter Design Application Note, 2000, pages 1 - 44; teaches shifting a reference plane of a phase component (page 8).

i. Bruce Archambeault et al.; "Time Domain Gating of Frequency Domain S-Parameter Data To Remove Connector End Effects for PCB and Cable Applications", 2006, 2006 IEEE EMC Symposium, pages 199 - 202; not prior art, but teaches the general method of claim 1.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russ Guill whose telephone number is 571-272-7955. The examiner can normally be reached on Monday - Friday 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Any inquiry of a general nature or relating to the status of this application should be directed to the TC2100 Group Receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Russ Guill
Examiner
Art Unit 2123

RG

PAUL RODRIGUEZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

1/4/07